Case Study: Air Cargo

Instructions

Read the case below and analyze the data provided to answer the questions in the case. You may use a calculator, but you should not use any other resources or consult others about the case. Once you have answered the questions, you will prepare a short, 10-15min presentation that will be presented during the interview. You will be evaluated on the quality of your analysis, PowerPoint slides and communication of information. You can consider including the following items, but you are free to present any aspects of the case you wish:

- Key facts and important aspects
- Risks and issues
- Recommendations
- Next steps
- Other considerations or information needed

Case Overview

Shane Smith, the manager of the Alaskan company, Air Cargo, is trying to optimize the company's cargo plane operations. Air Cargo has been in business for eight years and they specialize in transporting goods to and from cities within Alaska. The goods to be distributed arrive to Air Cargo by ship in the city of Anchorage and Air Cargo then transports them by air to small and mid-sized distribution centers across the state. They currently service Fairbanks, Kodiak, and Nome.

Air Cargo has two planes, *Alpha and Bravo*, which can fly to any city in the Alaskan network. Alpha is the bigger plane, capable of moving 8,000 kg. at a time, and Bravo is a considerably smaller mid-size carrier with a capacity of 3,000 kg. each. The daily cost of operation is $10,000 for Alpha and $5,000 for Bravo. Additionally, different products generate different levels of revenue per kg. distributed. With this in mind, Shane wants to optimize the distribution process by ensuring goods are being distributed via the shortest possible route for the lowest cost.

Shane realized that he would need some data to investigate the current situation and develop a plan. He reached out to the logistics department and was able to get the following data:

- The products that Air Cargo transports, and the revenue generated per kg. distributed.
- A map of available routes.
- Daily volume targets for each city (the amount of each product that each distribution center requires per day).
- Current daily flight routes/loads.
- Actual daily volume distributed of each product for each city.

Shane's goal is to leverage this data to ensure that volume targets are being met, while operating efficiently when it comes to route length and cost.

Questions

1. What insights can you derive from the target volumes and actual volume distributed?
2. Quantify the revenue impact of the insights you derived in Question #1.
3. Would you recommend any changes to the current distribution routes?
4. If you could add one plane to the Air Cargo fleet (Another Alpha or another Bravo), what would it be and why?
5. How can Shane increase revenue for Food/Drink products?
6. What additional information would have been helpful to determine if Shane is operating efficiently?
7. Air Cargo wants to add a distribution center in McCarthy with the following volume targets: 500 kg. electronics, 2000 kg. food/drink, and 1000 kg. pharmaceuticals. How would you recommend they incorporate this into their strategy (Hint: Same planes or new planes? What routes?)

Sample Data Extracted

Fig 1: Table Products and Revenue Generated Per Kg. Distributed

Product	Revenue Per Kg.
Electronics	$12
Food/Drink	$6
Pharmaceuticals	$22

Fig 2: Map of available air routes

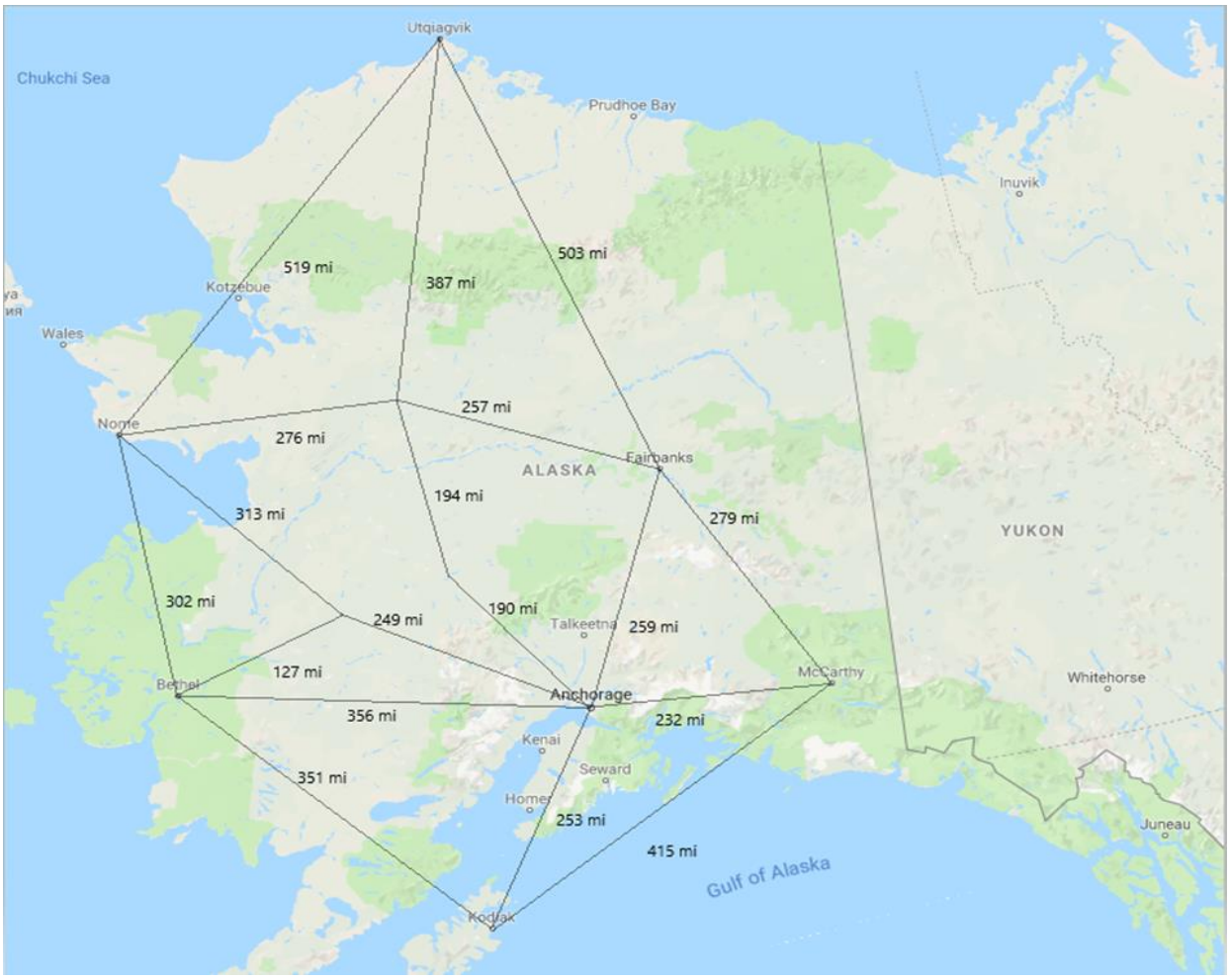

Fig 3: Daily Volume Targets By City (kg.)

	Electronics	Food/Drink	Pharmaceuticals
Fairbanks	2000	3000	900
Kodiak	1000	1500	1200
Nome	750	4000	1300

Fig 4: Current Daily Flight Routes and Loads (kg.)

Alpha: Anchorage > Nome > Fairbanks
Bravo: Anchorage > Kodiak

	Electronics	Food/Drink	Pharmaceuticals
Alpha	2000	5000	1000
Bravo	1000	1000	1000

Fig 5: Actual Daily Volume Distributed (kg.)

	Electronics	Food/Drink	Pharmaceuticals
Fairbanks	1250	2000	500
Kodiak	1000	1000	1000
Nome	750	3000	500